

METHODS AND COMPOSITIONS FOR MODULATING STEM CELLS

ABSTRACT OF THE DISCLOSURE

5 The invention provides methods for inhibiting stem cell differentiation and
for increasing the effective dose of stem cells in a subject. HSC differentiation can be
inhibited by applying an HSC differentiation-inhibiting polypeptide identified in the present
invention to an HSC culture in vitro, or administering the polypeptide to a subject in vivo.
Some other methods of the invention comprise first obtaining a population of hematopoietic
10 stem cells, introducing into the cells an HSC differentiation-inhibiting polynucleotide
disclosed herein, and expressing the HSC differentiation-inhibiting polynucleotide in the
cells. Such genetically modified stem cells can be administered to a subject whereby
effective dose of the stem cells in the subject can be increased. This invention further
provides novel molecular markers of hematopoietic stem cells, and methods for enriching
15 hematopoietic stem cells using these novel markers.